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EXAMINER

A, PHI DIEU TRAN

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3633

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/679,075	Applicant(s) DURHAM, STEVEN	
	Examiner PHI D. A	Art Unit 3633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/20/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21,23-29 and 31-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21,23-29 and 31-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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This office action is a response to the amendment of 2/20/2009. The amendment of 2/20/2009 is considered as superseding all previous amendment and considered the official response to the office action of 7/9/2007. Examiner is sending applicant a non-final office action so that applicant has a fair opportunity to respond to the 112 and art rejections..

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation of “ semi-transparent” is not supported by the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 33, 35, 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 the last paragraph “ electricity at least one of....” is confusing. It is suggested that applicant claim --electricity from at least one of....--.

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Claim 35 line 2 “a light source” is confusing. It is suggested that applicant claim --the light source-- since “a light source” is already set forth in claim 33.

Claim 39 “the inverter” is indefinite as it is lacking antecedent basis. Should the claim be depended upon claim 38 instead?

The claims are examined as best understood.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21, 26-27, 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr.(5847537) in view of Muraska et al (2002/0159245) and Mori (3278811).

Parmley Sr. (figure 1) shows a shelter capable of producing electrical energy comprising: a photovoltaic canopy (16) defining a sheltered area thereunder (col.4, line 64 – col. 5, line1), the photovoltaic canopy comprising an upper surface and a lower surface, the upper surface comprising a photovoltaic layer (solar panel 62) that is capable of producing an electrical current when exposed to light, a supporting structure (131, 133) connected to and supporting the canopy (62).

Parmley Sr. does not show a light emissive layer mounted on the lower surface and operatively connected to the photovoltaic layer for utilizing the electricity generated by the photovoltaic layer when the photovoltaic layer is exposed to light, said light emissive layer

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oriented to emit light onto the photovoltaic layer for generating electricity.

Muraska et al (figure 2) discloses a light emissive layer(206) mounted on a surface of a transmissive layer (212) of the photovoltaic device (device including layer 212 and 208) to allow the for generation and utilization of the electricity by the photovoltaic device and the emissive layer, the light emitting layer comprising thin film-like component (paragraph 6), the light emitting layer comprising a phosphor layer (paragraph [0021] lines 5-10). See also paragraphs [0023] and [0024]

Mori discloses a photovoltaic device generating electricity on both sides of the substrate per the upper and lower photovoltaic layer (14, figure 5) to double the output energy (col 3 lines 57-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s structures to show a light emissive layer mounted on a surface of a transmissive layer of the photovoltaic device as taught by Muraska et al in order to light a needed area with sunlight as taught by Muraska et al, and having the photovoltaic layer on both sides of the substrate as taught by Mori and the emissive layer on both sides of the substrate would enable the illumination of both sides when needed and doubling of the electricity generation.

Parmley Sr. as modified shows a light emissive layer mounted on the lower surface and operatively connected to the photovoltaic layer for utilizing the electricity generated by the photovoltaic layer when the photovoltaic layer is exposed to light, said light emissive layer oriented to emit light onto the photovoltaic layer for generating electricity.

Per claim 26, Parmley Sr. as modified further shows the canopy is semi-transparent.

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Per claim 31, Parmley Sr. as modified further shows the light emissive layer comprising light emitting diode panel that displays human readable information (the information being the structural make-up itself, and applicant has not specified what the information is).

Per claim 32, Parmley Sr. as modified by Murasko et al further shows the light emissive layer comprising a light emitting thin film phosphor layer (paragraph 21 lines 5-10).

3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr.

(5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Noennich (5379753).

4. Parmley Sr. as modified shows all the claimed limitations except for the canopy being tiltable.

5. Noennich discloses a tiltable canopy (14) to allow the panel to follow the direction of the sun.

6. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structures to show the canopy being tiltable so that the canopy can follow the direction of the sun as taught by Noennich to improve the efficiency of electricity generation of the canopy.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr.

(5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Jones et al (5578139).

8. Parmley Sr. as modified shows all the claimed limitations except for the canopy being a curved structure that is downwardly concave.

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9. Jones et al (figure 4) shows a canopy being a curved structure that is downwardly concave.

10. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structure to show the canopy being a curved structure that is downwardly concave as taught by Jones et al in order to form a solar panel with large light incident surface area which would increase the electricity generation.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Ho(6895145).

12. Parmley Sr. as modified shows all the claimed limitations including the photovoltaic layer comprising a plurality of flexible thin film, except for the light emissive layer comprising stacked light emissive layers.

13. Ho discloses the use of light emissive layers to provide light to an area.

14. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structure to show the light emissive layer comprising stacked light emissive layers as taught by Ho in order to provide illumination with minimum electrical usage.

15. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Ho(6895145).

Parmley Sr. as modified shows all the claimed structural limitations including the shelter comprising a second photovoltaic layer attached to the lower surface of the canopy, the second

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photovoltaic layer is directed to receive light from the light emissive layer, the upper surface of the photovoltaic canopy is oriented to receive sunlight directly except for the light emissive light being an organic artificial light source.

Ho discloses the use of either LED or OLED to display information.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structure to show the light emissive light being an organic artificial light source as taught by Ho to achieve efficient utilization of electricity generated by the photovoltaic device as OLED consumes small amount of electricity.

Per claim 29, Parmley Sr. as modified further shows the organic artificial light source (OLED) is co-located on at least one of the first photovoltaic layer and the second photovoltaic layer.

16. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811).

Parmley Sr. (figure 1) shows a shelter capable of producing electrical energy comprising: a canopy having an underside defining a sheltered area thereunder, the sheltered area including at least one vehicle parking space, (figure 1), a supporting structure (131, 133) connected to and supporting the canopy (62, 16), the canopy comprising a photovoltaic device (62) capable of producing an electrical current when exposed to light, the shelter having no walls (no walls between car lanes 20A, 20B), the device generates electricity from at least one of sunlight and light emitted by the light emitting layer.

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Parmley Sr. does not show a light emissive layer attached to the underside of the canopy and powered by electricity generated by the photovoltaic device, wherein the device generates electricity from the light emitted by the light emitted layer.

Muraska et al (figure 2) discloses a light emissive layer(206) mounted on a surface of a transmissive layer (212) of the photovoltaic device (device including layer 212 and 208) to allow for the generation and utilization of the electricity by the photovoltaic device; the emissive layer, the light emitting layer comprising thin film-like component (paragraph 6), the light emitting layer comprising a phosphor layer (paragraph 21 lines 5-10).

Mori discloses a photovoltaic device generating electricity on both sides of the substrate per the upper and lower photovoltaic layer (14, figure 5) to double the output energy (col 3 lines 57-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s structures to show a light emissive layer mounted on a surface of a transmissive layer of the photovoltaic device as taught by Muraska et al in order light a needed area with electricity generated from sunlight, and having the photovoltaic layer on both sides of the substrate as taught by Mori and the emissive layer on both sides of the substrate would enable the illumination of both sides when needed and doubling of the electricity generation.

Parmley Sr. as modified shows a light emissive layer attached to the underside of the canopy and powered by electricity generated by the photovoltaic device, wherein the device generates electricity from the light emitted by the light emitted layer,

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Per claims 34-35, Parmley Sr. as modified shows all the claimed limitations except for an electrical load being a battery, the battery is operatively connected to the light source.

Muraska et al further discloses an electrical load (104, 204) being a battery to collect electricity to be used by the light emitting device.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structures to show an electrical load being a battery, the battery is operatively connected to a light source as taught by Muraska et al to enable electricity collection/storage and selective utilization thereof.

17. Claims 36-37, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811).

Parmley Sr. (figure 1) shows a carport comprising at least one photovoltaic canopy, the photovoltaic canopy (16, 62) sheltering a parking area for at least one vehicle, a supporting structure (131, 133) connected to and supporting the canopy (62, 16) and permitting access by a vehicle to the parking area, the photovoltaic canopy produces a DC electrical current when exposed to light, photovoltaic canopy comprising an upper surface and a lower surface.

Parmley Sr. does not show a light emissive diode panel attached thereto and powered by the photovoltaic canopy, the photovoltaic canopy generates electricity from the light emitted by the light emitted diode panel, an electrical load operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight and light from the light emitting diode panel.

Muraska et al (figure 2) discloses a light emissive layer(206) mounted on a surface of a transmissive layer (212) of the photovoltaic device (device including layer 212 and 208) to allow

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for the generation and utilization of the electricity by the photovoltaic device; an electrical load (204, 104) operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight and light from the light emitting diode panel.

Mori discloses a photovoltaic device generating electricity on both sides of the substrate per the upper and lower photovoltaic layer (14, figure 5) to double the output energy (col 3 lines 57-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s structures to show a light emissive layer mounted on a surface of a transmissive layer of the photovoltaic device to allow for the generation and utilization of the electricity by the photovoltaic device, an electrical load operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight as taught by Muraska et al in order light a needed area with electricity generated from sunlight, and having the photovoltaic layer on both sides of the substrate as taught by Mori and the emissive layer on both sides of the substrate would enable the illumination of both sides when needed and doubling of the electricity generation.

Parmley Sr. as modified shows a light emissive diode panel attached thereto and powered by the photovoltaic canopy, the photovoltaic canopy generates electricity from the light emitted by the light emitted diode panel, an electrical load operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight and light from the light emitting diode panel.

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Per claim 37, Parmley Sr. as modified further shows the electrical load being a battery which is charged by the DC current produced by the photovoltaic canopy.

Per claim 40, Parmley Sr. as modified further shows the photovoltaic canopy comprising at least two panels, each panel comprising an upper surface having a photovoltaic layer, a lower surface having a light emitting diode panel, at least one of the light emitting diode panels functions as an information display (the panel itself is an information display).

18. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 36 above and further in view of Lawheed (6672064).

19. Parmley Sr. as modified shows all the claimed limitations except for an inverter for converting the DC electrical current produced by the photovoltaic canopy to an AC current, means for transmitting the AC electrical current to a power distribution grid of a utility company.

20. Lawheed discloses the use of an inverter converting DC to AC current to be connected to an electrical grid (col 7 lines 52-58).

21. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structures to show an inverter for converting the DC electrical current produced by the photovoltaic canopy to an AC current, means for transmitting the AC electrical current to a power distribution grid of a utility company as taught by Lawheed to enable the reselling of the excess energy back to the utility company resulting in cost saving and extra income.

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22. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245), Lawheed and Mori (3278811) as applied to claim 38 above and further in view of Britannica (NPL).

23. Parmley Sr. as modified shows all the claimed limitations except for a reverse meter for measuring AC current produced by the inverter.

24. Britannica discloses the use of reverse metering to enable proper selling of excess power from solar panel to electric company.

25. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structures to show a reverse meter for measuring AC current produced by the inverter as taught by Britannica since it would enable proper accounting for the amount of resale electricity back to the electric company.

26. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 40 above and further in view of Noennich (5379753).

27. Parmley Sr. as modified shows all the claimed limitations except for the canopy being tiltable.

28. Noennich discloses a tiltable canopy (14) to allow the panel to follow the direction of the sun.

29. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structures to show the canopy being tiltable so that the canopy can follow the direction of the sun as taught by Noennich to improve the efficiency of electricity generation of the canopy.

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30. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmley Sr. (5847537) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Britannica (NPL).

Parmley Sr. as modified shows all the claimed limitations except for an electrical load being selected from the group consisting of a reverse power meter and a power distribution grid of a utility company.

Britannica discloses the use of reverse metering to enable proper selling of excess power from solar panel to electric company.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Parmley Sr.'s modified structures to show an electrical load being selected from the group consisting of a reverse power meter and a power distribution grid of a utility company as taught by Britannica since it would enable proper accounting for the amount of resale electricity back to the electric company.

31. Claims 21, 26-27, 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811).

Igarashi et al (figure 1) shows a shelter capable of producing electrical energy comprising: a photovoltaic canopy(8) defining a sheltered area thereunder, the photovoltaic canopy comprising an upper surface and a lower surface, the upper surface comprising a photovoltaic layer (8) that is capable of producing an electrical current when exposed to light, a supporting structure (3, 5, 2) connected to and supporting the canopy (62).

Igarashi et al does not show a light emissive layer mounted on the lower surface and operatively connected to the photovoltaic layer for utilizing the electricity generated by the

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photovoltaic layer when the photovoltaic layer is exposed to light, said light emissive layer oriented to emit light onto the photovoltaic layer for generating electricity.

Muraska et al (figure 2) discloses a light emissive layer(206) mounted on a surface of a transmissive layer (212) of the photovoltaic device (device including layer 212 and 208) to allow the for generation and utilization of the electricity by the photovoltaic device and the emissive layer, the light emitting layer comprising thin film-like component (paragraph 6), the light emitting layer comprising a phosphor layer (paragraph 21 lines 5-10).

Mori discloses a photovoltaic device generating electricity on both sides of the substrate per the upper and lower photovoltaic layer (14, figure 5) to double the output energy (col 3 lines 57-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's structures to show a light emissive layer mounted on a surface of a transmissive layer of the photovoltaic device as taught by Muraska et al in order to light a needed area with sunlight as taught by Muraska et al, and having the photovoltaic layer on both sides of the substrate as taught by Mori and the emissive layer on both sides of the substrate would enable the illumination of both sides when needed and doubling of the electricity generation.

Igarashi et al as modified shows a light emissive layer mounted on the lower surface and operatively connected to the photovoltaic layer for utilizing the electricity generated by the photovoltaic layer when the photovoltaic layer is exposed to light, said light emissive layer oriented to emit light onto the photovoltaic layer for generating electricity.

Per claim 26, Igarashi et al as modified further shows the canopy is semi-transparent.

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Per claim 31, Igarashi et al as modified further shows the light emissive layer comprising light emitting diode panel that displays human readable information (the information being the structural make-up itself, and applicant has not specified what the information is).

Per claim 32, Igarashi et al as modified by Murasko et al further shows the light emissive layer comprising a light emitting thin film phosphor layer (paragraph 21 lines 5-10).

32. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Noennich (5379753).

33. Igarashi et al as modified shows all the claimed limitations except for the canopy being tiltable.

34. Noennich discloses a tiltable canopy (14) to allow the panel to follow the direction of the sun.

35. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's modified structures to show the canopy being tiltable so that the canopy can follow the direction of the sun as taught by Noennich to improve the efficiency of electricity generation of the canopy.

36. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Jones et al (5578139).

37. Igarashi et al as modified shows all the claimed limitations except for the canopy being a curved structure that is downwardly concave.

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38. Jones et al (figure 4) shows a canopy being a curved structure that is downwardly concave.

39. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al's modified structure to show the canopy being a curved structure that is downwardly concave as taught by Jones et al in order to form a solar panel with large light incident surface area which would increase the electricity generation.

40. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Ho(6895145).

41. Igarashi et al as modified shows all the claimed limitations including the photovoltaic layer comprising a plurality of flexible thin film, except for the light emissive layer comprising stacked light emissive layers.

42. Ho discloses the use of light emissive layers to provide light to an area.

43. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al's modified structure to show the light emissive layer comprising stacked light emissive layers as taught by Ho in order to provide illumination with minimum electrical usage.

44. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Ho(6895145).

Igarashi et al as modified shows all the claimed structural limitations including the shelter comprising a second photovoltaic layer attached to the lower surface of the canopy, the second

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photovoltaic layer is directed to receive light from the light emissive layer, the upper surface of the photovoltaic canopy is oriented to receive sunlight directly except for the light emissive light being an organic artificial light source.

Ho discloses the use of either LED or OLED to display information.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's modified structure to show the light emissive light being an organic artificial light source as taught by Ho to achieve efficient utilization of electricity generated by the photovoltaic device as OLED consumes small amount of electricity.

Per claim 29, Igarashi et al as modified further shows the organic artificial light source (OLED) is co-located on at least one of the first photovoltaic layer and the second photovoltaic layer.

45. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al in view of Muraska et al (2002/0159245) and Mori (3278811).

Igarashi et al shows a shelter capable of producing electrical energy comprising: a canopy having an underside defining a sheltered area thereunder, the sheltered area including at least one vehicle parking space, a supporting structure (3, 2) connected to and supporting the canopy (8), the canopy comprising a photovoltaic device (8) capable of producing an electrical current when exposed to light, the shelter having no walls, the device generates electricity from at least one of sunlight and light emitted by the light emitting layer.

Igarashi et al does not show a light emissive layer attached to the underside of the canopy and powered by electricity generated by the photovoltaic device, wherein the device generates electricity from the light emitted by the light emitted layer.

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Muraska et al (figure 2) discloses a light emissive layer(206) mounted on a surface of a transmissive layer (212) of the photovoltaic device (device including layer 212 and 208) to allow for the generation and utilization of the electricity by the photovoltaic device; the emissive layer, the light emitting layer comprising thin film-like component (paragraph 6), the light emitting layer comprising a phosphor layer (paragraph 21 lines 5-10).

Mori discloses a photovoltaic device generating electricity on both sides of the substrate per the upper and lower photovoltaic layer (14, figure 5) to double the output energy (col 3 lines 57-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's structures to show a light emissive layer mounted on a surface of a transmissive layer of the photovoltaic device as taught by Muraska et al in order light a needed area with electricity generated from sunlight, and having the photovoltaic layer on both sides of the substrate as taught by Mori and the emissive layer on both sides of the substrate would enable the illumination of both sides when needed and doubling of the electricity generation.

Igarashi et al as modified shows a light emissive layer attached to the underside of the canopy and powered by electricity generated by the photovoltaic device, wherein the device generates electricity from the light emitted by the light emitted layer,

Per claims 34-35, Igarashi et al as modified shows all the claimed limitations except for an electrical load being a battery, the battery is operatively connected to the light source.

Muraska et al further discloses an electrical load (104, 204) being a battery to collect electricity to be used by the light emitting device.

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It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's modified structures to show an electrical load being a battery, the battery is operatively connected to a light source as taught by Muraska et al to enable electricity collection/storage and selective utilization thereof.

46. Claims 36-37, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811).

Igarashi et al (figures 1-7) shows a carport comprising at least one photovoltaic canopy(8), the photovoltaic canopy (8) sheltering a parking area for at least one vehicle, a supporting structure (3, 2) connected to and supporting the canopy (8) and permitting access by a vehicle to the parking area, the photovoltaic canopy produces a DC electrical current when exposed to light, photovoltaic canopy comprising an upper surface and a lower surface.

Igarashi et al does not show a light emissive diode panel attached thereto and powered by the photovoltaic canopy, the photovoltaic canopy generates electricity from the light emitted by the light emitted diode panel, an electrical load operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight and light from the light emitting diode panel.

Muraska et al (figure 2) discloses a light emissive layer(206) mounted on a surface of a transmissive layer (212) of the photovoltaic device (device including layer 212 and 208) to allow for the generation and utilization of the electricity by the photovoltaic device; an electrical load (204, 104) operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight and light from the light emitting diode panel.

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Mori discloses a photovoltaic device generating electricity on both sides of the substrate per the upper and lower photovoltaic layer (14, figure 5) to double the output energy (col 3 lines 57-62).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's structures to show a light emissive layer mounted on a surface of a transmissive layer of the photovoltaic device to allow for the generation and utilization of the electricity by the photovoltaic device, an electrical load operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight as taught by Muraska et al in order light a needed area with electricity generated from sunlight, and having the photovoltaic layer on both sides of the substrate as taught by Mori and the emissive layer on both sides of the substrate would enable the illumination of both sides when needed and doubling of the electricity generation.

Igarashi et al as modified shows a light emissive diode panel attached thereto and powered by the photovoltaic canopy, the photovoltaic canopy generates electricity from the light emitted by the light emitted diode panel, an electrical load operatively connected to the photovoltaic canopy for utilizing the electricity generated by the canopy when the canopy is exposed to at least one of sunlight and light from the light emitting diode panel.

Per claim 37, Igarashi et al as modified further shows the electrical load being a battery which is charged by the DC current produced by the photovoltaic canopy.

Per claim 40, Igarashi et al as modified further shows the photovoltaic canopy comprising at least two panels, each panel comprising an upper surface having a photovoltaic layer, a lower

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surface having a light emitting diode panel, at least one of the light emitting diode panels functions as an information display (the panel itself is an information display).

47. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 36 above and further in view of Lawheed (6672064).

48. Igarashi et al as modified shows all the claimed limitations except for an inverter for converting the DC electrical current produced by the photovoltaic canopy to an AC current, means for transmitting the AC electrical current to a power distribution grid of a utility company.

49. Lawheed discloses the use of an inverter converting DC to AC current to be connected to an electrical grid (col 7 lines 52-58).

50. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's modified structures to show an inverter for converting the DC electrical current produced by the photovoltaic canopy to an AC current, means for transmitting the AC electrical current to a power distribution grid of a utility company as taught by Lawheed to enable the reselling of the excess energy back to the utility company resulting in cost saving and extra income.

51. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245), Lawheed and Mori (3278811) as applied to claim 38 above and further in view of Britannica (NPL).

52. Igarashi et al as modified shows all the claimed limitations except for a reverse meter for measuring AC current produced by the inverter.

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53. Britannica discloses the use of reverse metering to enable proper selling of excess power from solar panel to electric company.

54. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's modified structures to show a reverse meter for measuring AC current produced by the inverter as taught by Britannica since it would enable proper accounting for the amount of resale electricity back to the electric company.

55. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 40 above and further in view of Noennich (5379753).

56. Igarashi et al as modified shows all the claimed limitations except for the canopy being tiltable.

57. Noennich discloses a tiltable canopy (14) to allow the panel to follow the direction of the sun.

58. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al's modified structures to show the canopy being tiltable so that the canopy can follow the direction of the sun as taught by Noennich to improve the efficiency of electricity generation of the canopy.

59. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (JP 11-303440) in view of Muraska et al (2002/0159245) and Mori (3278811) as applied to claim 21 above and further in view of Britannica (NPL).

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Igarashi et al as modified shows all the claimed limitations except for an electrical load being selected from the group consisting of a reverse power meter and a power distribution grid of a utility company.

Britannica discloses the use of reverse metering to enable proper selling of excess power from solar panel to electric company.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Igarashi et al 's modified structures to show an electrical load being selected from the group consisting of a reverse power meter and a power distribution grid of a utility company as taught by Britannica since it would enable proper accounting for the amount of resale electricity back to the electric company.

Response to Arguments

60. Applicant's arguments with respect to claims 21, 23-29, and 31-42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art shows different solar panel mounting designs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phi D A whose telephone number is 571-272-6864. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Phi D A/
Primary Examiner, Art Unit 3633

Phi Dieu Tran A

4/8/09